CLAIM

1. An anti-methyllysine antibody capable of specifically recognizing methyllysine and not recognizing lysine.

2. An anti-methyllysine antibody capable of specifically recognizing a methyllysine residue in a protein, without being influenced by surrounding amino acid residues.

3. An anti-methyllysine antibody specifically binding to dimethyllysine and monomethyllysine.

4. The antibody according to any of claims 1 to 3, whose reactivity to dimethyllysine is superior to reactivity to monomethyllysine.

5. The antibody according to any of claims 1 to 4, which is a polyclonal antibody.

6. The antibody according to any of claims 1 to 4, which is a monoclonal antibody.

7. A hybridoma producing an anti-methyllysine antibody and selected from the group consisting of MEK3D7, MEK4E10, MEK5F7, MEK2-5A11 and MEK2-5B11.

8. An anti-methyllysine mouse monoclonal antibody produced by the hybridoma of claim 7.

9. A process for producing the polyclonal antibody of claim 5, which comprises immunizing an animal with an antigen obtained by chemically methylating a protein and subjecting the resulting antibody to affinity purification with methyllysine or a protein obtained by chemically methylating a protein different from the antigen.

10. A process for producing the monoclonal antibody of claim 6, which comprises immunizing an animal with an antigen obtained by chemically methylating a protein and then selecting a hybridoma

secreting an antibody recognizing a protein obtained by chemically methylating a protein different from the antigen.

11. A method of detecting a methylated protein, which comprises using the antibody of any of claims 1 to 6 or 8.